ABSTRACT

Methods and apparatus are provided for endpoint detection in a chemical mechanical planarization (CMP) process. Reflectance spectra data is taken periodically in different areas of a surface of a semiconductor wafer during a chemical mechanical planarization process. Three different reflectance spectra are identified to determine a status of the CMP process. A first reflectance spectra data corresponds to light reflected predominately from a layer of material on the surface of the semiconductor wafer. A second reflectance spectra corresponds to the layer of material being thinned such that the second reflectance spectra is modified by an underlying layer of material. A third reflectance spectra corresponds to light reflected predominately from the underlying layer of material.